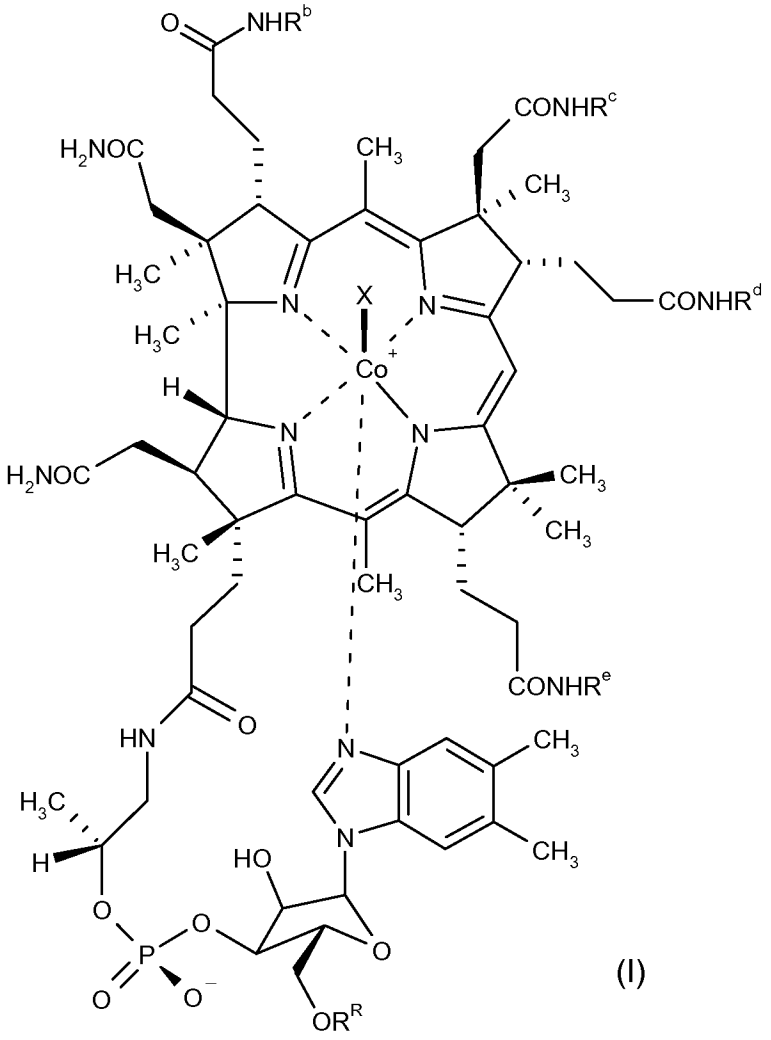
## AMENDMENTS TO THE CLAIMS

**1. (Currently Amended)** A cobalamin derivative of formula (I):




(I)

wherein:

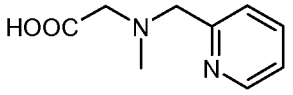
(i) $R^b$ is a spacer-chelator group optionally carrying a metal atom;

(ii) $R^c$, $R^d$, and $R^e$~~, and $R^R$~~ are an antibiotic or antiproliferative therapeutic agent,~~ each connected through a linker Z,~~ or hydrogen; and $R^R$ is an antibiotic or antiproliferative therapeutic agent connected through a linker Z, or hydrogen;

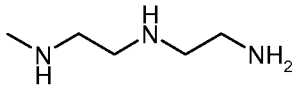
(iii) with the proviso that at least one of the residues $R^c$, $R^d$, $R^e$ and $R^R$ are hydrogen;

(iv) X is cyano, methyl, hydroxy, aquo or a 5'-deoxyadenosyl group; and

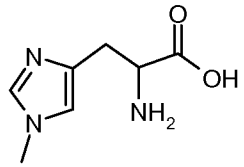
(v) the central cobalt (Co) atom is optionally in the form of a radioactive isotope; and wherein the spacer-chelator group consists of an aliphatic chain of 2 to 4 carbon atoms carrying a chelator selected from the chelators of formulae (II) to (IX):



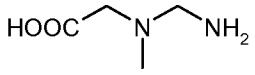
(II)



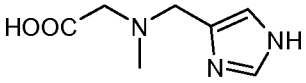
(III)



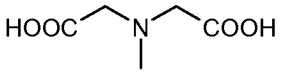
(IV)



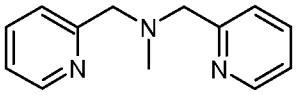
(V)



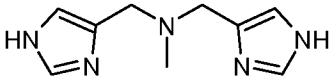
(VI)



(VII)



(VIII)



(IX)

wherein carboxyl groups in formulae (II) to (IX) may be present as esters; and

said cobalamin derivative:

(a) has no binding affinity or less than 20% binding affinity to transcobalamin II when compared to the binding affinity of non-modified cobalamin in a binding test, and

(b) retains activity as a vitamin B12 substitute.

**2. (Previously Presented)** The cobalamin derivative according to claim 1 retaining more than 2% of the activity as a vitamin B12 substitute in a growth assay.

**3. (Original)** The cobalamin derivative according to claim 1
(a) having less than 10% of binding affinity to transcobalamin II when compared to the binding affinity of non-modified cobalamin in a binding test, and
(b) retaining more than 10% of the activity as a vitamin B12 substitute in a growth assay.

**4. (Original)** The cobalamin derivative according to claim 1
(a) having less than 5% of binding affinity to transcobalamin II when compared to the binding affinity of non-modified cobalamin in a binding test, and
(b) retaining more than 10% of the activity as a vitamin B12 substitute in a growth assay.

**5. (Previously presented)** The cobalamin derivative according to claim 1 carrying a therapeutic and/or diagnostic agent.

**6. (Previously presented)** The cobalamin derivative according to claim 1 carrying a radioactive metal.

**7-10. (Cancelled)**

**11. (Previously presented)** The cobalamin derivative according to claim 6 wherein the radioactive metal is $^{94m}Tc$, $^{99m}Tc$, $^{188}Re$, $^{186}Re$, $^{111}In$, $^{90}Y$, $^{64}Cu$, $^{67}Cu$ or $^{177}Lu$.

**12. (Cancelled)**

**13. (Previously Presented)** The cobalamin derivative according to claim 1wherein X is cyano.

**14. (Previously Presented)** The cobalamin derivative according to claim 1, wherein the central cobalt atom is the radioisotope $^{57}Co$ or $^{60}Co$.

**15. (Previously Presented)** The cobalamin derivative according to claim 1, wherein
$R^b$ is a spacer-chelator group optionally carrying a metal atom, the spacer is an aliphatic chain of 2 to 4 carbon atoms, and the chelator is of formula (II), wherein the group COOH is optionally in the form of an ester;
$R^c$, $R^d$, $R^e$ and $R^R$ are hydrogen; and
X is cyano.

**16. (Previously Presented)** The cobalamin derivative according to claim 15, wherein
$R^b$ is a spacer-chelator group optionally carrying a metal atom, the spacer is an aliphatic chain of 4 carbon atoms, and the chelator is of formula (II), wherein the group COOH is in the form of the ethyl ester;
$R^c$, $R^d$, $R^e$ and $R^R$ are hydrogen; and
X is cyano.

**17. (Previously Presented)** The cobalamin derivative according to claim 1, wherein
$R^d$ is a spacer-chelator group optionally carrying a metal atom, the spacer is an aliphatic chain of 3 carbon atoms, and the chelator is of formula (II), wherein the group COOH is optionally in the form of an ester;
$R^b$, $R^c$, $R^e$ and $R^R$ are hydrogen; and
X is cyano.

**18. (Previously Presented)** The cobalamin derivative according to claim 1, wherein
$R^b$ is a spacer-chelator group optionally carrying a metal atom, the spacer is an aliphatic chain of 2 carbon atoms, and the chelator is of formula (III);
$R^c$, $R^d$, $R^e$ and $R^R$ are hydrogen; and
X is cyano.

**19. (Previously presented)** A pharmaceutical composition comprising a cobalamin derivative according to claim 1.

**20. (Previously Presented)** A method of diagnosis of a neoplastic disease in a mammal comprising

(a) exposing the mammal suspected of being inflicted by a neoplastic disease or an infection to a period of a vitamin B12 – free diet, and

(b) subsequently applying a cobalamin derivative according to claim 1 carrying a diagnostic agent.

**21. (Currently Amended)** A method of treatment of a mammal suffering from ~~a neoplastic disease~~ melanoma comprising

(a) exposing the mammal in need of treatment to a period of a vitamin B12 – free diet, and

(b) subsequently applying a cobalamin derivative according to claim 1 carrying a therapeutic agent.

**22-25. (Cancelled)**

**26. (Previously presented)** The method of claim 20, wherein the cobalamin is effective in cancer imaging.

**27. (Cancelled)**